PCT CO-OPERATION TREATY

Applicant:	Agency for Science, Technology and Research, et al.
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Dear Sirs:

RESPONSE TO WRITTEN OPINION

This is in response to the Written Opinion mailed September 20, 2004.

The Examiner has indicated that claims 1 to 24 lacks novelty in light of D1. The applicant respectfully disagrees.

Claim 1 of the present invention relates to a method of forming a polymer and recites polymerizing a microemulsion comprising a drug, water, a monomer and a surfactant copolymerizable with said monomer to form a polymer matrix defining interconnected pores filled by water, and the drug is dispersed in one or both of the

polymer matrix and the pores and is releasable therefrom when the polymer is in contact with a liquid.

By contrast, D1 does not disclose a method of forming a polymer by polymerizing a microemulsion that comprises a drug, or of forming a polymer defining interconnected pores filled by water. D1 discloses a method of forming a polymer by polymerizing a mixture comprising a polymerizable component and an organic solvent. The pores in the polymer are formed once the organic phase is removed (see. e.g. p. 3, lines 21-25; p. 16, lines 10-13). While D1 alludes to the possibility that the polymer described therein can be used in the field of drug delivery patches and devices (p. 22 line 10), D1 does not disclose how the drug is delivered, and there is no teaching or suggestion to include a drug in the mixture before polymerization. In fact D1 teaches away from incorporating a drug in the microemulsion mixture as the drug will be washed out during extraction of the organic phase to form pores.

For at least these reasons, claim 1, and its dependent claims (claims 2 to 16), are not anticipated by D1 and are novel.

Similarly, Claims 17, 20 and 23 each recites a polymer or polymer matrix defining interconnected pores and a drug dispersed in one or both of the polymer (matrix) and pores. Claims 20 and 23 each recites that the drug is an ophthalmic drug. As mentioned, D1 does not teach dispersing a drug in a polymer having interconnected pores, and nor does it disclose or suggest any particular method or device for delivering a drug.

Therefore, it is submitted that claims 17, 20 and 23, and their respective dependent claims (claims 18, 19, 21, 22 and 24), are not anticipated by D1, and are novel.

The Examiner has also indicated that claims 17 and 18 are not novel in view of D2 or D3. The applicant respectively disagrees.

D2 discloses a porous polymer matrix for drug delivery and D3 discloses a medical device with a porous or sponge coating for controlled drug release. However, neither D2 nor D3 discloses or suggests a polymer comprising a polymer matrix defining interconnected pores distributed throughout the polymer and a drug dispersed therein. D2 does not indicate what types of pores are formed in the matrix. The only pores disclosed in D3 are discrete pores 103 (see e.g. Fig. 1B) or voids 12 (see e.g. Fig. 2). Since each of D2 and D3 fails to disclose at least the feature of interconnected pores, it is submitted that claims 17 and 18 are not anticipated by D2 or D3, and are novel.

The Examiner also indicated that clams 1 to 24 lack an inventive step in view of one or other of the cited references. The Applicant disagrees. As disclosed, including a drug in the microemulsion before polymerization as claimed in claim 1 of the present application and providing a polymer matrix defining interconnected pores with a drug dispersed in one or both the matrix and pores make it possible for the drug to be released at a relatively steady rate and the rate of release can also be controlled by the particular porous structure (see e.g. para. 5, lines 3-6, and para. 25). None of the cited references discloses either of these features and none of the cited references provide any suggestion or motivation to modify any of them or combine D1 with D2 or D3 to arrive at the subject

matters claimed in the present invention, because none of them recognized the benefits of these features. For at least these reasons, each of claims 1 to 24 is inventive over the references of record.

In view of the above, the Applicant respectfully requests a favorable International Preliminary Report on Patentability.

Respectfully submitted,

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